Please add new Claims 34 – 48 as follows:

34. (New) A low resistance ITO thin film having a resistivity less than 1×10^{-4} Ω cm, said film deposited on a crystalline substrate by epitaxial growth.

35. (New) A low resistance ITO thin film according to claim 34, wherein Sn dopant activity defined as {carrier density (cm^{-3})/ Sn density in said ITO film (number of Sn / cm^3)} is greater than 80%.

36. (New) A low resistance ITO thin film according to claim 34, wherein mobility is greater than 39 cm^2/Vs.

37. (New) A substrate having a low resistant ITO thin film comprising:

a crystalline substrate; and

a low resistance ITO thin film having a resistivity lower than 1×10^{-4} Ω cm produced for deposition on said crystalline substrate by epitaxial growth.

38. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein Sn dopant activity defined as {carrier density (cm^{-3})/ Sn density in said ITO film (number of Sn / cm^3)} is greater than 80%.

39. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein mobility of said ITO thin film is greater than 39 cm^2/Vs.

40. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said ITO thin film has a pattern formed thereon.

41. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said ITO thin film has a In_2O_3 crystal structure of one of a C-rare earth type and a corundum type.

42. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said ITO thin film is formed on said substrate which has a temperature of 500 – 1000 °C by a pulsed laser deposition method.

43. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said ITO thin film is formed by one of a low-voltage sputtering, an oxygen cluster beam deposition, a chemical vapor deposition, a metal organic chemical vapor deposition, a metal organic chemical vapor deposition, a metal organic chemical vapor deposition – atomic layer deposition, and a molecule beam epitaxy.

Sub C3

44. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said crystal substrate is provided to accept an In_2O_3 crystal structure deposited thereon.

45. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said substrate is a single crystal substrate.

Sub C4

46. (New) A substrate having a low resistant ITO thin film according to claim 37, wherein said crystalline substrate is one of a YSZ single crystal substrate, a substrate on which a C-axis oriented Zn0 thin film is formed, a sapphire substrate, a SiC single crystal substrate and a silicon single crystal substrate.

47. (New) A substrate haaving a low resistant ITO thin film according to claim 37, wherein said crystalline substrate has a C axis oriented Zn0 film formed thereon.

48. (New) The method for manufacturing a low-resistance ITO film of claim 37, said method comprising a step of:

depositing an ITO film on a crystalline substrate having a temperature of 500-1000°C by a pulsed laser vapor deposition method.